

STATE OF MISSOURI  
**DEPARTMENT OF NATURAL RESOURCES**

Bob Holden, Governor • Stephen M. Mahfood, Director

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SUPERFUND DIVISION

November 26, 2003

Mr. Aaron W. Miller  
Environmental Manager of Primary Smelting  
The Doe Run Company  
881 Main Street  
Herculaneum, Missouri 63048

40328451



Superfund

Dear Mr. Miller:

I am writing to convey the Missouri Department of Natural Resources' (DNR) comments on the Work Plan for Community Risk Assessment, The Doe Run Company, Herculaneum, Missouri, July 3, 2003, prepared by Gradient Corporation (Work Plan). Enclosed is a copy of review comments from the Missouri Department of Health and Senior Services (DHSS), with which we agree, and hereby incorporate into our comments.

We agree with the U. S. Environmental Protection Agency's (EPA) comments on the Work Plan in their September 2, 2003, letter, and believe they adequately address most of the DNR's concerns. We have referenced the EPA's comments below where we believe additional explanation or emphasis is needed. We agree with the EPA that the Work Plan has significant flaws. However, consistent with the EPA's approach, the DNR approves the Work Plan, and Doe Run must address and incorporate in the draft baseline human health risk assessment (HHRA) the comments in this letter, and the enclosed DHSS letter. Consistent with the EPA's direction, the first section of the draft baseline HHRA must also include a listing of our comments followed by responses/actions taken to address them.

1. This comment pertains to all sections of the Work Plan that differentiate the voluntary property purchase area for purposes of the baseline HHRA. The voluntary property purchase negotiated between the DNR, Missouri Attorney General's Office (AGO), and Doe Run is a remedial action, which should not be discussed or accounted for separately in the baseline HHRA. Consistent with the EPA's comment number 3, the baseline HHRA must address risk associated with the site in the absence of remedial action and other controls, and should not contain any discussion of remedial alternatives or actions, including the voluntary property purchase.
2. Section 1.1, first paragraph, last sentence, states that properties within the voluntary property purchase area are being considered for lease to individuals without children. Discussion of future re-occupancy of residences in the voluntary property purchase area should not appear in the baseline HHRA. The Settlement Agreement between the DNR,



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AGO, and Doe Run requires Doe Run to leave purchased residences vacant until they are demolished or re-deposition studies are complete, and the DHSS, DNR, City of Herculaneum, and Doe Run agree re-occupancy of residences is not a risk to human health. The DNR currently believes that response actions to clean up residential yard soil and home interiors have reduced the short-term lead exposure risks to Herculaneum residents to an acceptable level. However, the DNR does not consider re-deposition studies to be complete or conclusive, and the DNR has not agreed in general that re-occupancy of residences within the voluntary property purchase area is not a long-term risk to human health.

We believe additional re-deposition data is needed over time at the existing sampling locations and possibly additional sampling locations, and that an extended period of sampling and analyses may be needed to represent all areas within the voluntary property purchase area over time. Statistical analysis of re-deposition data will be needed as part of the re-deposition studies to evaluate any recontamination rates and trends. In addition, we believe it is highly uncertain whether re-contamination will occur in the future. Unless and until re-deposition studies completely and conclusively demonstrate that residences within the voluntary property purchase area are acceptable for re-occupancy at present and in the future, and additional risk management measures are implemented, the DNR does not agree that residences in the voluntary property purchase area are acceptable for re-occupancy as a matter of general policy. We recommend the entire voluntary property purchase area be considered a buffer zone, and planning should be for acceptable non-residential future uses of the voluntary property purchase area.

3. Sections 2, 2.1, 2.2, 2.3, and 2.4: We reiterate and emphasize the EPA's comment numbers 4 and 5. Child residents must be evaluated as receptors in the exposure scenarios for all residential areas, including both scenarios proposed for the voluntary property purchase area in section 2 Table 1. The voluntary property purchase area must not be distinguished from other residential areas for purposes of the baseline HHRA.

Exposure scenarios for adult and child residents must be evaluated for the buffer zone area proposed in the Work Plan. The buffer zone must also not be distinguished from other residential areas for purposes of the baseline HHRA. Doe Run may evaluate any other intermittent residential exposure scenarios it wishes for purposes of comparison with the child and adult resident scenarios.

Pursuant to the EPA's comment number 8, the receptors for the slag storage area in section 2 Table 1 must be "Adolescent Trespasser (7-16 yr)".

4. Several sections of the Work Plan discuss bioavailability in terms of input into the IEUBK. The absolute bioavailability is the input value for the IEUBK, not the relative bioavailability as is indicated in the Work Plan. Consistent with the EPA's comment number 6, Doe Run must use 36 percent absolute bioavailability (corresponding to 71 percent relative bioavailability) for lead in soil and street dust in the baseline HHRA and IEUBK, according to Doe Run's juvenile swine study.

The Work Plan does not include substantive justification for selecting 1 percent bioavailability for material from the slag storage area. The draft baseline HHRA must include such justification, including the results of bioavailability testing conducted on materials from the slag storage area. This is particularly important since the baseline HHRA described in the Work Plan addresses windblown dust from the slag into

residential areas, as well as direct exposure of trespassers to materials in the slag storage area.

5. While specifically directed to section 2.1, it appears much of the EPA's comments 5 and 6 would also apply to sections 2.2, 2.3, and 2.4 of the Work Plan.
6. Sections 4, 5, and 6: Section I.I.D. of the AOC Statement of Work requires that the EPA, DNR, and DHSS shall designate, after consultation with Doe Run, all site-specific or default values to be used in the IEUBK model and risk assessment. Therefore, Doe Run must submit all input parameters for the model and risk assessment for all constituents of potential concern (COPCs) to the EPA, DNR, and DHSS, and any supporting discussion necessary, for agency review and comment before submitting the draft baseline HHRA. (See also the EPA comment 18.)
7. Section 4, second paragraph, states Exposure Point Concentrations (EPCs) will be the arithmetic mean concentration of lead in soil for each property or exposure area. Section 5.1, last sentence, states EPCs for residential soils will be calculated for the whole exposure area, rather than by property. We agree with the EPA's comment number 10 that it may not be appropriate to assume the whole town of Herculanum is one exposure unit, and that sampling results and distribution of contamination in surface soil must be used to determine appropriate exposure units. Section I.I.D. of the AOC Statement of Work requires high use areas to have separate exposure assumption scenarios for each class of property. This provision does not appear to be addressed in the Work Plan. The draft baseline HHRA must clarify these issues.

If you have any questions, please contact me at (573) 751-8629, or in writing at P.O. Box 176, Jefferson City, Missouri 65102-0176.

Sincerely,

HAZARDOUS WASTE PROGRAM



Robert C. Hinkson  
Environmental Specialist  
Superfund Section

RCH:ta

Enclosure

c: Gale Carlson, DHSS  
Bruce Morrison, EPA  
Shelley Woods, AGO  
Leslie Warden, CAG